Iowa Association of Municipal Utilities

Smart Grid Thermostat Project

Abstract

The Iowa Association of Municipal Utilities (IAMU) Smart Grid Thermostat project involves the deployment of advanced metering and customer systems for five participating municipal utilities. The project aims to reduce customer electricity costs, peak demands, and utility operating costs. The project deploys about 5,450 smart meters, 13,800 programmable communicating thermostats, and direct load control devices to: (1) allow customers to view and control their energy consumption at their convenience through a Web portal, and (2) allow the participating utilities to manage, measure, and verify targeted demand reductions during peak periods.

At-A-Glance

Recipient: Iowa Association of Municipal Utilities

State: Iowa

NERC Region: Midwest Reliability Organization

Total Budget: $12,531,203

Federal Share: $5,000,000

Key Partners: Algona Municipal Utilities, Atlantic Municipal Utilities, Cedar Falls Utilities, Rockford Municipal Utilities, West Point Municipal Utilities

Project Type: Advanced Metering Infrastructure and Customer Systems

Equipment

- Approx. 5,450 Smart Meters
- AMI Communication Systems
  - Meter Communications Network
  - Backhaul Communications
- Meter Data Management System
- Customer Systems for Approx. 16,200 Customers
  - Customer Web Portal
  - Approx. 2,400 Direct Load Control Devices
  - Approx. 13,800 Programmable Communicating Thermostats

Key Targeted Benefits

- Reduced Electricity Costs for Customers
- Deferred Investment in Generation and Distribution Capacity Expansion
- Optimized Generator Operation
- Reduced Truck Fleet Fuel Usage
- Reduced Greenhouse Gas and Criteria Pollutant Emissions

Smart Grid Features

Communications infrastructure includes an advanced network system for smart meter communications and future integration with other smart grid technologies. The communications systems are being selected by IAMU and participating utilities in a competitive solicitation. These communication systems provide participating utilities with two-way information feedback capabilities to collect data from, and send signals to, smart meters in the project. A separate wireless network supports communications between the utilities and direct load control devices and programmable communicating thermostats.

Advanced metering infrastructure (AMI) includes deploying smart meters to about 5,400 residential, commercial, and industrial customers. These meters provide capabilities for a variety of current and future customer electricity price and service options. Operational cost savings come from the automation of meter reading and customer service tasks.

Direct load control devices deployed by the project include approximately 2,400 direct load control switches and approximately 13,800 programmable communicating thermostats. These devices provide direct load control options for utilities and customers to reduce electricity consumption of heating and cooling equipment during periods of peak demand. The load control activities enable the participating utilities to better manage peak loads, lower wholesale power costs, and reduce the need for peak generation units.

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Advanced electricity service options offered through the project include a customer Web portal that facilitates two-way information feedback between the customers and the utility while enabling the customers to better manage their electricity use and costs.

Timeline

Key Milestones	Target Dates
AMI deployment begins	Q4 2010
Customer systems deployment begins	Q4 2010
AMI deployment complete	Q4 2012
Customer systems deployment complete	Q4 2012

Contact Information

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